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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,461	03/09/2004	Richard B. Joerger	200-66400 (PB040047AF)	2407

56929 7590 06/21/2007
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EXAMINER

JAMAL, ALEXANDER

ART UNIT	PAPER NUMBER
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2614

MAIL DATE	DELIVERY MODE
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06/21/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/796,461

Applicant(s)

JOERGER, RICHARD B.

Examiner

Alexander Jamal

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☒ Claim(s) 11, 16, 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. **Claims 11,16,18** objected to because of the following informalities: “battery status information that represents the tones” should be changed to “battery status information represented by the tones”. Appropriate correction is required.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
2. **Claims 1,17,19,6-8,18,20** are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art Fig. 1, and further in view of Bell (5930340).

As per **claim 1**, Applicant's admitted prior art Fig. 1 discloses encoding circuit 126, and a first pair of wires coupling out of controller 126. Although controller 126 only shows a single wire in Fig. 1, examiner notes that any signaling will require a signal path and ground return path. Examiner reads the ground and signal wire as the 'first pair of

Art Unit: 2614

wires'. Controller 126 receives battery status information from sensor 114 and outputs tones representing battery status on line 130 (specification page 5 lines 15-30). The controller circuit 126 inherently comprises an 'encoding circuit' for the purpose of generating status signaling to the controller 142. Examiner reads any signaling as comprising one or more frequency components (tones). However, applicant's admitted prior art does not disclose that the battery status is communicated on the first pair of wires.

Bell discloses that it is desirable to leverage existing copper infrastructure by multiplexing various functions together on a common subscriber line where each function has signaling in different frequency bands (Col 1 lines 25-40). Bell discloses that one subscriber line may be used to transmit at least two signaling protocols with each protocol isolated so as to only couple to the correct terminals (Figs. 1 and 2). Examiner draws the standard telephone 'voice signaling' of Bell to applicant's admitted prior art 'power signaling' supplied on applicant's pair 110B (an existing copper pair) in Fig. 1. It would have been obvious to one of ordinary skill in the art at the time of this application that the existing copper infrastructure could be used to multiplex signaling protocols at different frequencies (such as the disclosed DC power signal and the 'tone signaling' performed by applicant's Fig. 1 Controller 126), in order to make use of the existing copper infrastructure.

As per **claim 17**, it is rejected as per the claim 1 rejection. Applicant's Fig. 1 discloses voltage sensor 124 signaling controller 126.

As per **claim 19**, it is rejected as per the claim 17 rejection. Applicant's Fig. 1 discloses charge control 122 which may couple or uncouple the battery voltage to the subscriber line.

As per **claim 6**, Applicant's admitted prior art and Bell disclose the multiplexed signaling on the subscriber line, and Bell discloses highpass (data band) and lowpass (voice band) filters coupled to each terminal that is coupled to the subscriber line (Figs. 1 and 2). Applicant's Fig. 1 discloses controller 126 that sends control signaling over a first pair of wires (a signal path and a ground return path) that is coupled to the second pair. 110B via a filter as taught by Bell.

As per **claim 7**, Bell discloses low pass filter 311 coupled to the low frequency signaling terminal (Fig. 3). Applicant's Fig. 1, in view of Bello's teachings would have lowpass filtering at all of the low frequency (DC) terminals (battery output, power supply output, ONT power supply components 134,136, voltage sensor 124) and high pass filtering at all of the high frequency terminals.(battery status controllers 126,142)

As per **claim 8**, applicant's Fig. 1 discloses power supply 114 that converts the AC input 115 to DC voltage coupled to the second pair of wires via a third pair of wires (outputting from the power supply). As per applicant's claims, there is another claimed 'second pair of wires'. This is also disclosed in applicant's Fig. 1 as the additional pair that is coupled to the telephone.

As per **claims 18,20** applicant's Fig. 1 in view of Bell's teachings, discloses voltage sensor 134 and controller 142 connected to input node N2 via the filtering

components. The controller inherently comprises a status decoder for the purpose of decoding the battery status signaling sent by the controller 126.

3. **Claims 2-5,9** rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art Fig. 1 in view of Bell (5930340) as applied to claims 1,6-8 and further in view of DeCramer et al. (20020041676).

As per **claim 2**, Applicant's admitted prior art and Bell disclose the multiplexed signaling on the subscriber line, and Bell discloses highpass (data band) and lowpass (voice band) filters coupled to each terminal that is coupled to the subscriber line (Figs. 1 and 2). Applicant's Fig. 1 discloses controller 126 that sends control signaling over a first pair of wires (a signal path and a ground return path) that is coupled to the second pair 110B via a filter as taught by Bell. However, Bell does not specify the actual circuit implementation of the filters.

DeCramer discloses multiplexed signaling on a subscriber line, and discloses highpass and lowpass filtering used to isolate the various terminal types from each other. DeCramer discloses highpass filter in Fig. 2 comprises capacitors 3 and 4, and lowpass filter in Fig. 3 comprising inductors L1 and L2. It would have been obvious to one of ordinary skill in the art at the time of this application to implement capacitors to the high frequency terminals and inductors to the low frequency (DC) terminals of applicant's Fig. 1, for the purpose of performing the filtering function disclosed by Bell. As such the

Art Unit: 2614

first pair of wires outputting from the controller will be coupled to the second pair of wires 110B (applicant's Fig. 1) via a pair of capacitors.

As per **claim 3**, the second pair of wires carried the battery dc voltage and the signaling (one or more tones).

As per **claims 4, 5**, applicant's prior art discloses that the controller 126 send out signaling information (specification page 4 lines 4-11). Any modulated waveform (signal) inherently comprises 1 or more frequency components. Examiner reads each component as a 'tone'. As such there may be 1 tone or more than one tone transmitted at a time.

As per **claims 9,10**, they are rejected as per the claim 2,7,8 rejections.

As per **claim 11**, applicant's Fig. 1 in view of Bell's teachings, discloses voltage sensor 134 and controller 142 connected to input node N2 via the filtering components. The controller inherently comprises a status decoder for the purpose of decoding the battery status signaling sent by the controller 126.

4. **Claims 12-16** rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art Fig. 1 in view of Bell (5930340) as applied to claims 1 and further in view of Dhara et al. (6879582).

As per **claim 12**, applicant's Fig. 1 discloses a battery with status signaling but does not specify that the battery is implemented as a UPS.

Art Unit: 2614

Dhara discloses a FTTH interface unit with a UPS with battery backup and status reporting (Col 6 lines 10-25). It would have been obvious to one of ordinary skill in the art at the time of this application to implement a UPS system for the advantage of providing a power supply that is less prone to interruptions.

As per **claim 13**, it is rejected as per the claim 9 rejection.

As per **claims 14,15**, they are rejected as per the claim 8 rejection.

As per **claim 16** it is rejected as per the claim 11 rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Jamal whose telephone number is 571-272-7498. The examiner can normally be reached on M-F 9AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis A Kuntz can be reached on 571-272-7499. The fax phone numbers for the organization where this application or proceeding is assigned are **571-273-8300** for regular communications and **571-273-8300** for After Final communications.

Examiner Alexander Jamal
June 17, 2007

A handwritten signature in black ink, appearing to read 'Alexander Jamal', with a long, sweeping horizontal line extending to the right.